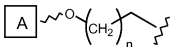


## AMENDMENTS TO THE CLAIMS

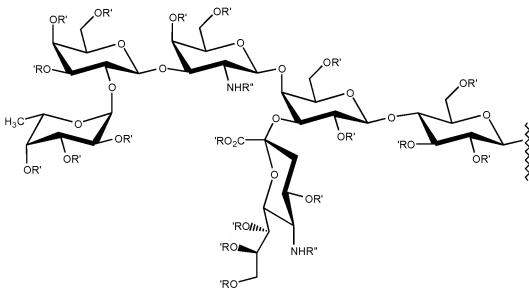
This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-55: **Canceled**

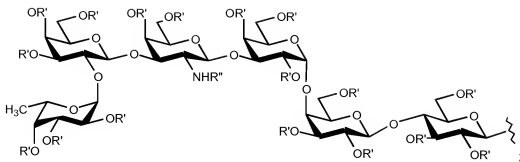
56. **(Currently Amended)** A multi-antigenic glycopeptide comprising a peptidic backbone made up of at least three amino acid residues, wherein two or more of said amino acids ~~is~~ are independently substituted with a glycosidic moiety having the structure:



wherein each occurrence of A is independently a carbohydrate determinant selected from the group consisting of Globo-H, fucosyl GM1, KH-1, glycophorin, STN, Le<sup>y</sup>, N3, Tn, 2,6-STn, (2,3)ST, TF, a carbohydrate domain having the structure:



and a carbohydrate domain having the structure:



wherein each occurrence of R' is independently hydrogen or a protecting group; and

wherein R'' is hydrogen or a nitrogen protecting group;

wherein each occurrence of n is independently 1-8 and at least one occurrence of A has a different structure from other occurrences of A.

57. **(Canceled)**

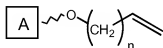
58. **(Previously Presented)** The glycopeptide of claim 56 wherein the glycopeptide is bound to an immunostimulant carrier protein, peptide or lipid.

59. **(Previously Presented)** The glycopeptide of claim 58 wherein the carrier protein is bovine serum albumin, polylysine or keyhole limpet hemocyanin.

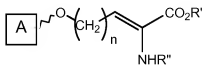
60. **(Previously Presented)** The glycopeptide of claim 58 wherein the lipid is tripalmitoyl-S-glycerylcysteinylserine.

61. **(Previously Presented)** The glycopeptide of claim 56 wherein the amino acids substituted with an n-alkyl glycosidic moiety are prepared by a process comprising steps of:

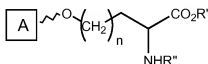
(a) providing an alkenyl glycoside having the structure:



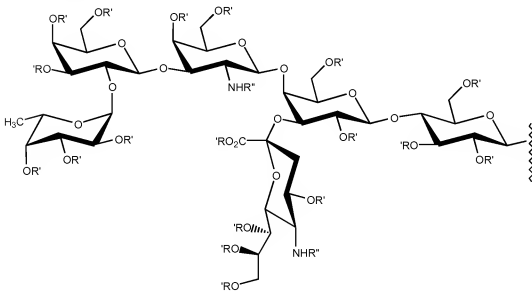
and reacting said alkenyl glycoside under suitable conditions to generate an enamide ester having the structure:



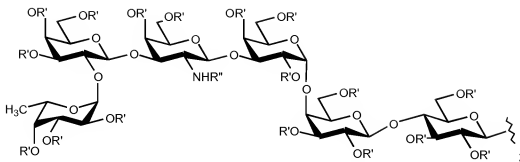
(b) reacting said enamide ester under suitable conditions to generate a glycoamino acid having the structure:



wherein, for each of the structures above, n is 1-8, wherein A is a carbohydrate domain selected from the group consisting of Globo-H, fucosyl GM1, KH-1, glycophorin, STN, Le<sup>y</sup>, N3, Tn, 2,6-STn, (2,3)ST, TF, and protected form thereof, a carbohydrate domain having the structure:

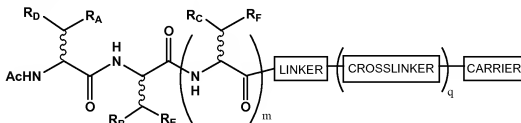


and a carbohydrate domain having the structure:



wherein each occurrence of R' is independently hydrogen or a protecting group;  
and wherein R'' is hydrogen or a nitrogen protecting group;  
and wherein for the glycoamino acid structure R' and R'' are each independently protecting group or hydrogen.

62. **(Previously Presented)** The glycopeptide of claim 56, wherein said glycopeptide is a construct having the structure:



wherein the linker is  $-O-$ ,  $-NR_G-$ ,  $-NR_G(CR_{H1}R_I)_kNR_J-$ ,  $-NR_G(CR_{H1}R_I)_kNR_J(C=O)(CR_{H1}R_I)_kS-$ ,  $-(CR_{H1}R_I)_kNR_I-$ ,  $-O(CR_{H1}R_I)_kNR_J$ , an oligoester fragment comprising from 2 to about 20 hydroxy acyl residues, a peptidic fragment comprising from 2 to about 20 amino acyl residues, or a linear or branched chain alkyl or aryl carboxylic ester; wherein each occurrence of k is independently 1-5; and each occurrence of  $R_G$ ,  $R_{H1}$ ,  $R_I$  and  $R_J$  is independently hydrogen, a linear or branched, substituted or unsubstituted, cyclic or acyclic alkyl moiety, or a substituted or unsubstituted aryl moiety;

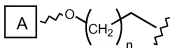
wherein the crosslinker is a moiety derived from a crosslinking reagent capable of conjugating a surface amine of the carrier with a terminal thiol of the linker;

wherein the carrier is a protein or lipid;

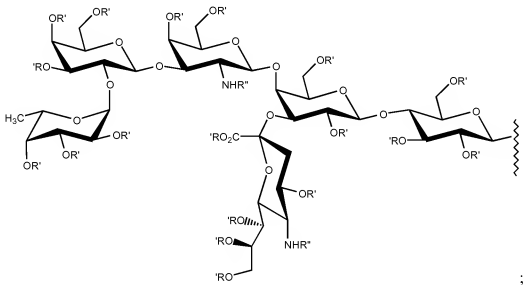
wherein m is 1, 2 or 3;

wherein q is 0 or 1;

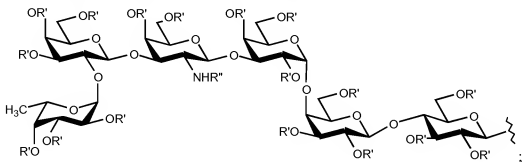
wherein each occurrence of  $R_A$ ,  $R_B$  and  $R_C$  is independently H or methyl; and  
 wherein each occurrence of  $R_D$ ,  $R_E$  and  $R_F$  is independently an alkyl glycosidic moiety having the structure:



wherein each occurrence of A is independently selected from a carbohydrate domain selected from the group consisting of Globo-H, fucosyl GM1, KH-1, glyophorin, STN,  $Le^y$ , N3, Tn, 2,6-STn, (2,3)ST, TF, a carbohydrate domain having the structure:



and a carbohydrate domain having the structure:



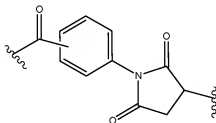
wherein each occurrence of  $R'$  is independently hydrogen or a protecting group; and  
 wherein  $R''$  is hydrogen or a nitrogen protecting group;

wherein each occurrence of n is independently 0-8; and at least one occurrence of A has a different structure from other occurrences of A.

63. **(Canceled)**

64. **(Canceled)**

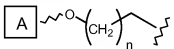
65. **(Previously Presented)** The construct of claim 62, wherein the crosslinker is a fragment having the structure:



whereby said structure is generated upon conjugation of maleimidobenzoic acid N-hydroxy succinimide ester with a linker.

66. **(Previously Presented)** The construct of claim 62, wherein m is 1 and the construct has three occurrences of A comprising Tn, Globo-H and Le<sup>y</sup>.

67. **(Previously Presented)** The glycopeptide of claim 56 wherein the glycopeptide has six occurrences of the alkyl glycosidic moiety having the structure:



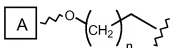
68. **(Canceled)**

69. **(Previously Presented)** The glycopeptide of claim 56 or 67 or the construct of claim 62, wherein each occurrence of A is independently Globo-H, fucosyl GM1, KH-1, glycophorin, STN, Le<sup>y</sup>, N3, Tn, 2,6-STn, (2,3)ST, or TF.

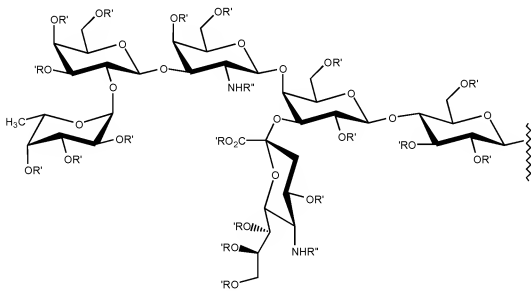
70. **(Previously Presented)** The construct of claim 62 wherein the carrier is bovine serum albumin, polylysine or keyhole limpet hemocyanin.

71. **(Previously Presented)** The construct of claim 62 wherein the carrier is tripalmitoyl-S-glycerylcysteinylserine.

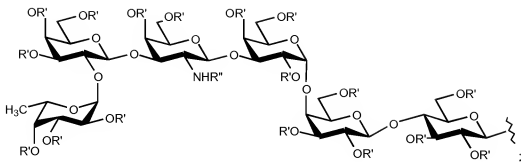
72. **(Currently Amended)** A multi-antigenic glycopeptide comprising a peptidic backbone made up of at least three amino acid residues, wherein two or more of said amino acids is are independently substituted with a glycosidic moiety having the structure:



wherein each occurrence of A is independently a carbohydrate determinant selected from the group consisting of Globo-H, fucosyl GM1, KH-1, glycophorin, STN, Le<sup>x</sup>, N3, Tn, 2,6-STn, (2,3)ST, TF, a carbohydrate domain having the structure:



and a carbohydrate domain having the structure:



wherein:

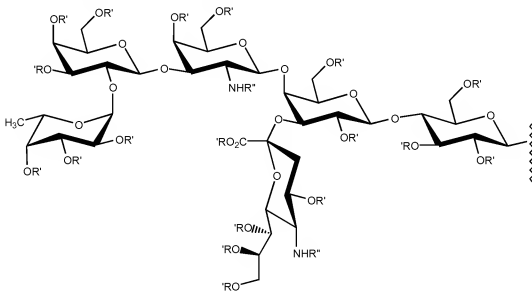
each occurrence of R' is independently hydrogen or a protecting group;

each occurrence of R'' is independently hydrogen or a nitrogen protecting group;

each occurrence of n is independently 1-8;

at least one occurrence of A has a different structure from other occurrences of A; and

at least one occurrence of A is a carbohydrate determinant having the structure:

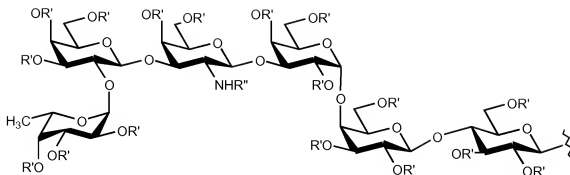


wherein each occurrence of R' is independently hydrogen or a protecting group;

and wherein each occurrence of R'' is independently hydrogen or a nitrogen protecting group.

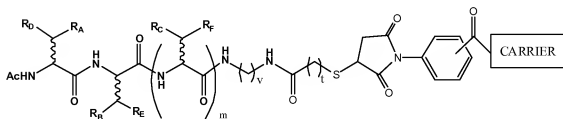
73. **(Previously Presented)** The glycopeptide of claim 56 or 67 or the construct of claim 62, wherein at least one occurrence of A is a carbohydrate determinant having the structure:





wherein each occurrence of R' is independently hydrogen or a protecting group;  
and wherein R'' is hydrogen or a nitrogen protecting group.

74. **(Currently Amended)** The construct of claim 62 having the structure:



wherein R<sub>A</sub>, R<sub>B</sub> and R<sub>C</sub> are each independently H or methyl;

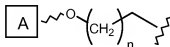
m is 1, 2 or 3;

v is 1-8;

t is 1-8; and

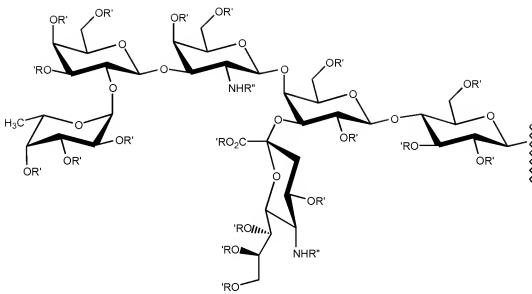
the carrier is a protein;

wherein each occurrence of R<sub>D</sub>, R<sub>E</sub> and R<sub>F</sub> is independently an alkyl glycosidic moiety having the structure:

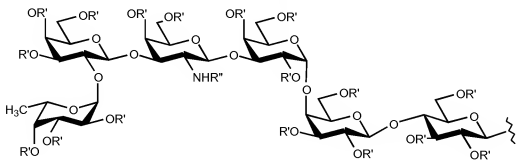


wherein n is 0-8;

each occurrence of A is independently a carbohydrate domain selected from the group consisting of Globo-H, fucosyl GM1, KH-1, glycophorin, STN, Le<sup>y</sup>, N3, Tn, 2,6-STn, (2,3)ST, or TF, a carbohydrate domain having the structure:



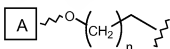
or and a carbohydrate domain having the structure:



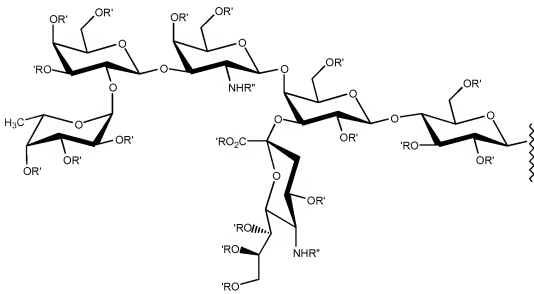
wherein each occurrence of R' is independently hydrogen or a protecting group;  
and wherein R'' is hydrogen or a nitrogen protecting group  
and whereby at least one occurrence of A has a different structure from other occurrences of A.

75. **(Previously Presented)** The construct of claim 74, wherein the protein is bovine serum albumin, polylysine or keyhole limpet hemocyanin.
76. **(Currently Amended)** A pharmaceutical composition comprising:  
one or more immunological adjuvants and/or a pharmaceutically suitable carrier;  
and

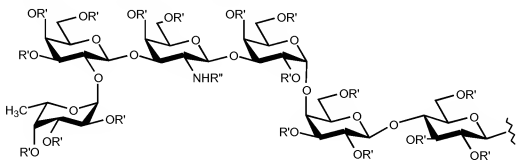
a multi-antigenic glycopeptide comprising a peptidic backbone made up of at least three amino acid residues, wherein two or more of said amino acids ~~is~~ are independently substituted with a glycosidic moiety having the structure:



wherein each occurrence of A is a carbohydrate determinant selected from the group consisting of Globo-H, fucosyl GM1, KH-1, glycophorin, STN, Le<sup>y</sup>, N3, Tn, 2,6-STn, (2,3)ST, TF, a carbohydrate domain having the structure:



and a carbohydrate domain having the structure:



wherein each occurrence of R' is independently hydrogen or a protecting group;  
and wherein R'' is hydrogen or a nitrogen protecting group;  
wherein each occurrence of n is independently 1-8 and at least one occurrence of A has a different structure from other occurrences of A.

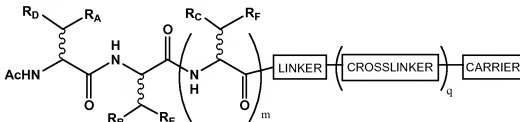
77. **(Canceled)**

78. **(Previously Presented)** The pharmaceutical composition of claim 76 wherein the glycopeptide is bound to an immunostimulant carrier protein or lipid.

79. **(Previously Presented)** The pharmaceutical composition of claim 78 wherein the carrier protein is bovine serum albumin, polylysine or keyhole limpet hemocyanin.

80. **(Previously Presented)** The pharmaceutical composition of claim 78 wherein the lipid is tripalmitoyl-S-glycerylcysteinylserine.

81. **(Previously Presented)** The pharmaceutical composition of claim 76, wherein said glycopeptide is a construct having the structure:



wherein the linker is  $-O-$ ,  $-NR_G-$ ,  $-NR_G(CR_HR_I)_kNR_J-$ ,  $-NR_G(CR_HR_I)_kNR_J(C=O)(CR_HR_I)_kS-$ ,  $-(CR_HR_J)_kNR_I-$ ,  $-O(CR_HR_I)_kNR_J$ , an oligoester fragment comprising from 2 to about 20 hydroxy acyl residues, a peptidic fragment comprising from 2 to about 20 amino acyl residues, or a linear or branched chain alkyl or aryl carboxylic ester; wherein each occurrence of  $k$  is independently 1-5; and each occurrence of  $R_G$ ,  $R_H$ ,  $R_I$  and  $R_J$  is independently hydrogen, a linear or branched, substituted or unsubstituted, cyclic or acyclic alkyl moiety, or a substituted or unsubstituted aryl moiety;

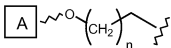
wherein the crosslinker is a moiety derived from a crosslinking reagent capable of conjugating a surface amine of the carrier with a terminal thiol of the linker;

wherein the carrier is a protein or lipid;

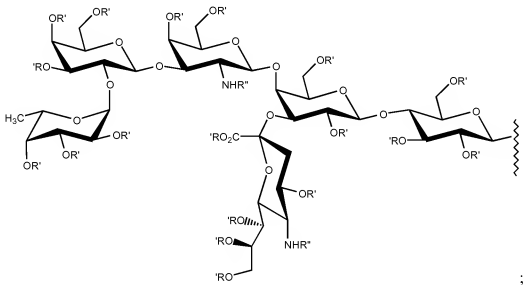
wherein  $m$  is 1, 2 or 3;

wherein  $q$  is 0 or 1;

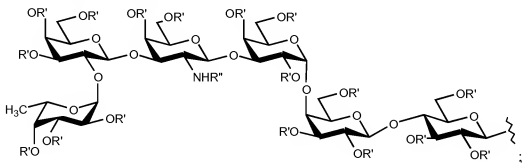
wherein each occurrence of  $R_A$ ,  $R_B$  and  $R_C$  is independently H or methyl; and  
 wherein each occurrence of  $R_D$ ,  $R_E$  and  $R_F$  is independently an alkyl glycosidic moiety having the structure:



wherein each occurrence of A is independently selected from a carbohydrate domain selected from the group consisting of Globo-H, fucosyl GM1, KH-1, glycophorin, STN,  $Le^y$ , N3, Tn, 2,6-STn, (2,3)ST, TF, a carbohydrate domain having the structure:



and a carbohydrate domain having the structure:



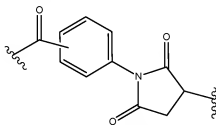
wherein each occurrence of  $R'$  is independently hydrogen or a protecting group; and  
 wherein  $R''$  is hydrogen or a nitrogen protecting group;

wherein each occurrence of n is independently 0-8; and at least one occurrence of A has a different structure from other occurrences of A.

82. **(Canceled)**

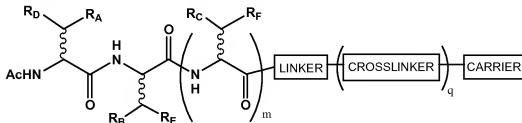
83. **(Canceled)**

84. **(Previously Presented)** The pharmaceutical composition of claim 81, wherein the crosslinker is a fragment having the structure:



whereby said structure is generated upon conjugation of maleimidobenzoic acid N-hydroxy succinimide ester with a linker.

85. **(Previously Presented)** A pharmaceutical composition comprising:  
one or more immunological adjuvants and/or a pharmaceutically suitable carrier;  
and  
a multi-antigenic glycopeptide comprising a peptidic backbone made up of at least three amino acid residues;  
wherein said glycopeptide is a construct having the structure:



wherein:

the linker is -O-, -NR<sub>G</sub>-, -NR<sub>G</sub>(CR<sub>H</sub>R<sub>I</sub>)<sub>k</sub>NR<sub>J</sub>-, -NR<sub>G</sub>(CR<sub>H</sub>R<sub>I</sub>)<sub>k</sub>NR<sub>J</sub>(C=O)(CR<sub>H</sub>R<sub>I</sub>)<sub>k</sub>S-, -  
(CR<sub>H</sub>R<sub>J</sub>)<sub>k</sub>NR<sub>I</sub>-, -O(CR<sub>H</sub>R<sub>I</sub>)<sub>k</sub>NR<sub>J</sub>, an oligoester fragment comprising from 2 to  
about 20 hydroxy acyl residues, a peptidic fragment comprising from 2 to about  
20 amino acyl residues, or a linear or branched chain alkyl or aryl carboxylic  
ester; wherein each occurrence of k is independently 1-5; and each occurrence of

$R_G$ ,  $R_H$ ,  $R_I$  and  $R_J$  is independently hydrogen, a linear or branched, substituted or unsubstituted, cyclic or acyclic alkyl moiety, or a substituted or unsubstituted aryl moiety;

the crosslinker is a moiety derived from a crosslinking reagent capable of conjugating a surface amine of the carrier with a terminal thiol of the linker;

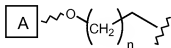
the carrier is a protein or lipid;

m is 1;

q is 0 or 1;

each occurrence of  $R_A$ ,  $R_B$  and  $R_C$  is independently H or methyl; and

each occurrence of  $R_D$ ,  $R_E$  and  $R_F$  is independently an alkyl glycosidic moiety having the structure:



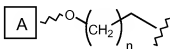
wherein:

each occurrence of n is independently 0-8;

at least one occurrence of A has a different structure from other occurrences of A; and

the construct has three occurrences of A comprising Tn, Globo-H and  $Le^y$ .

86. **(Previously Presented)** The pharmaceutical composition of claim 76, wherein the glycopeptide has six occurrences of the alkyl glycosidic moiety having the structure:



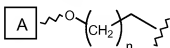
87. **(Canceled)**

88. **(Previously Presented)** The pharmaceutical composition of claim 76, 81 or 86, wherein each occurrence of A is independently Globo-H, fucosyl GM1, KH-1, glycophorin, STN,  $Le^y$ , N3, Tn, 2,6-STn, (2,3)ST, or TF.

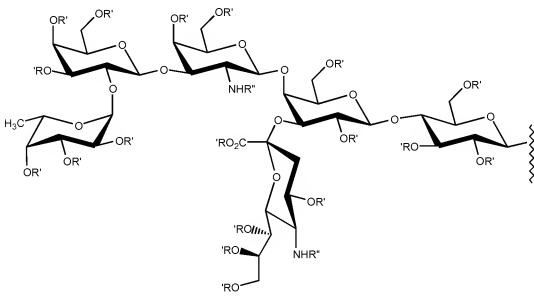
89. **(Previously Presented)** The pharmaceutical composition of claim 81 or 86 wherein the carrier is bovine serum albumin, polylysine or keyhole limpet hemocyanin.

90. **(Previously Presented)** The pharmaceutical composition of claim 81 or 86 wherein the carrier is tripalmitoyl-S-glycerylserine.

91. **(Previously Presented)** A pharmaceutical composition comprising:  
 one or more immunological adjuvants and/or a pharmaceutically suitable carrier;  
 and  
 a multi-antigenic glycopeptide comprising a peptidic backbone made up of at least three amino acid residues, wherein two or more of said amino acids is independently substituted with a glycosidic moiety having the structure:

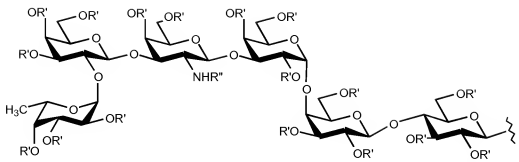


wherein each occurrence of A is a carbohydrate determinant selected from the group consisting of Globo-H, fucosyl GM1, KH-1, glycophorin, STN, Le<sup>x</sup>, N3, Tn, 2,6-STn, (2,3)ST, TF, a carbohydrate domain having the structure:

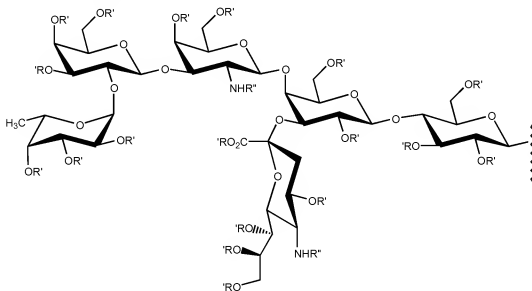


and a carbohydrate domain having the structure:



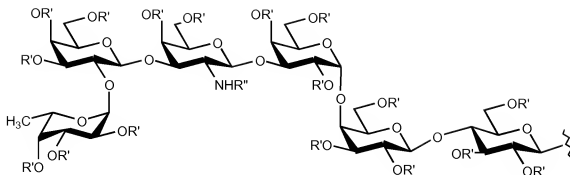


wherein each occurrence of R' is independently hydrogen or a protecting group;  
 and wherein R'' is hydrogen or a nitrogen protecting group;  
 wherein each occurrence of n is independently 1-8 and at least one occurrence of A has a different structure from other occurrences of A;  
 wherein at least one occurrence of A is a carbohydrate determinant having the structure:



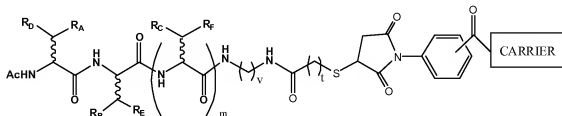
wherein each occurrence of R' is independently hydrogen or a protecting group;  
 and wherein each occurrence of R'' is independently hydrogen or a nitrogen protecting group.

92. **(Previously Presented)** The pharmaceutical composition of claim 76, 81 or 86,  
 wherein at least one occurrence of A is a carbohydrate determinant having the structure:



wherein each occurrence of R' is independently hydrogen or a protecting group;  
and wherein R'' is hydrogen or a nitrogen protecting group.

93. **(Currently Amended)** The pharmaceutical composition of claim 81, wherein the construct has the structure:



wherein R<sub>A</sub>, R<sub>B</sub> and R<sub>C</sub> are each independently H or methyl;

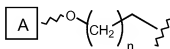
m is 1, 2 or 3;

v is 1-8;

t is 1-8; and

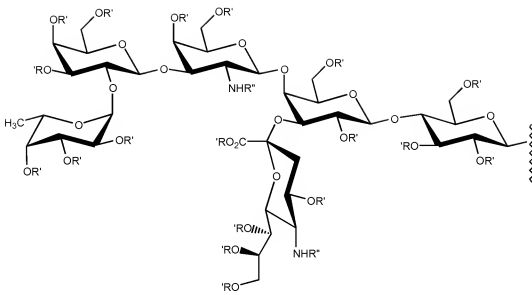
the carrier is a protein;

wherein each occurrence of R<sub>D</sub>, R<sub>E</sub> and R<sub>F</sub> is independently an alkyl glycosidic moiety having the structure:

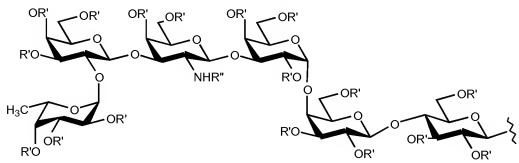


wherein n is 0-8;

each occurrence of A is independently a carbohydrate domain selected from the group consisting of Globo-H, fucosyl GM1, KH-1, glycophorin, STN, Le<sup>y</sup>, N3, Tn, 2,6-STn, (2,3)ST, or TF, a carbohydrate domain having the structure:



or and a carbohydrate domain having the structure:



wherein each occurrence of  $R'$  is independently hydrogen or a protecting group;  
 and wherein  $R''$  is hydrogen or a nitrogen protecting group  
 and whereby at least one occurrence of A has a different structure from other occurrences of A.

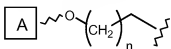
94. **(Previously Presented)** The pharmaceutical composition of claim 93, wherein the protein is bovine serum albumin, polylysine or keyhole limpet hemocyanin.

95. **(Previously Presented)** The pharmaceutical composition of claim 76 wherein at least one of said one or more immunological adjuvants is a saponin adjuvant.

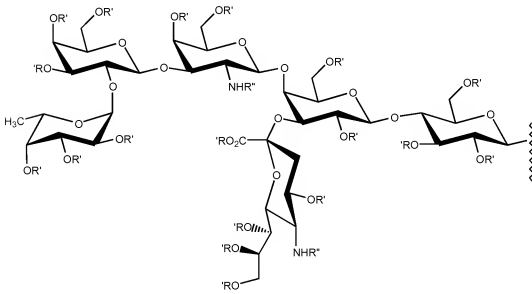
96. **(Currently Amended)** A pharmaceutical composition comprising:

one or more immunological adjuvants and/or a pharmaceutically suitable carrier;  
and

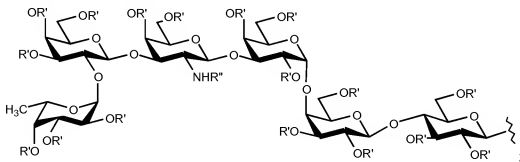
a multi-antigenic glycopeptide comprising a peptidic backbone made up of at least three amino acid residues, wherein two or more of said amino acids ~~is~~ are independently substituted with a glycosidic moiety having the structure:



wherein each occurrence of A is a carbohydrate determinant selected from the group consisting of Globo-H, fucosyl GM1, KH-1, glycophorin, STN, Le<sup>y</sup>, N3, Tn, 2,6-STn, (2,3)ST, TF, a carbohydrate domain having the structure:



and a carbohydrate domain having the structure:



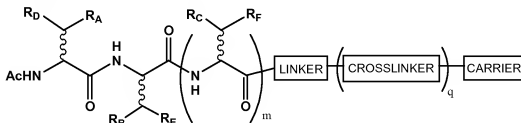
wherein each occurrence of R' is independently hydrogen or a protecting group;  
and wherein R'' is hydrogen or a nitrogen protecting group;

wherein each occurrence of n is independently 1-8 and at least one occurrence of A has a different structure from other occurrences of A;  
 wherein at least one of said one or more immunological adjuvants is saponin adjuvant GPI-0100.

97. **(Previously Presented)** The pharmaceutical composition of claim 76 wherein at least one of said one or more immunological adjuvants is bacteria or liposomes.

98. **(Previously Presented)** The pharmaceutical composition of claim 97 wherein the immunological adjuvant is Salmonella minnesota cells, bacille Calmette-Guerin or QS21.

99. **(Previously Presented)** The glycopeptide of claim 72, wherein said glycopeptide is a construct having the structure:



wherein:

the linker is  $-O-$ ,  $-NR_G-$ ,  $-NR_G(CR_HR_I)_kNR_J-$ ,

$-NR_G(CR_HR_I)_kNR_J(C=O)(CR_HR_I)_kS-$ ,  $-(CR_HR_I)_kNR_I-$ ,  $-O(CR_HR_I)_kNR_J$ , an oligoester fragment comprising from 2 to about 20 hydroxy acyl residues, a peptidic fragment comprising from 2 to about 20 amino acyl residues, or a linear or branched chain alkyl or aryl carboxylic ester; wherein each occurrence of k is independently 1-5; and each occurrence of  $R_G$ ,  $R_H$ ,  $R_I$  and  $R_J$  is independently hydrogen, a linear or branched, substituted or unsubstituted, cyclic or acyclic alkyl moiety, or a substituted or unsubstituted aryl moiety;

the crosslinker is a moiety derived from a crosslinking reagent capable of

conjugating a surface amine of the carrier with a terminal thiol of the linker;

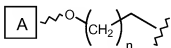
the carrier is a protein or lipid;

m is 1, 2 or 3;

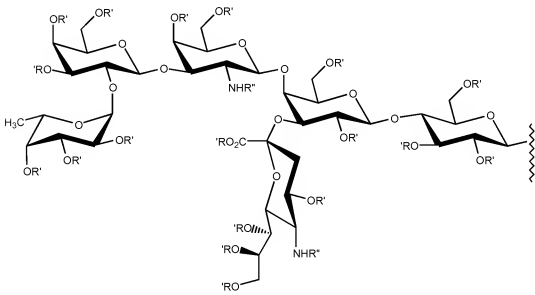
q is 0 or 1;

each occurrence of  $R_A$ ,  $R_B$  and  $R_C$  is independently H or methyl; and

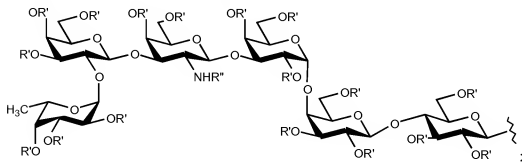
each occurrence of  $R_D$ ,  $R_E$  and  $R_F$  is independently an alkyl glycosidic moiety having the structure:



wherein each occurrence of A is independently selected from a carbohydrate domain selected from the group consisting of Globo-H, fucosyl GM1, KH-1, glycophorin, STN,  $Le^y$ , N3, Tn, 2,6-STn, (2,3)ST, TF, a carbohydrate domain having the structure:



and a carbohydrate domain having the structure:

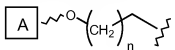


wherein each occurrence of  $R'$  is independently hydrogen or a protecting group;

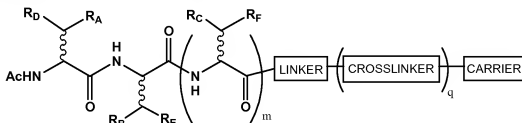
and wherein  $R''$  is hydrogen or a nitrogen protecting group;

wherein each occurrence of n is independently 0-8; and at least one occurrence of A has a different structure from other occurrences of A.

100. **(Previously Presented)** The glycopeptide of claim 72, wherein the glycopeptide has six occurrences of the alkyl glycosidic moiety having the structure:



101. **(Previously Presented)** The pharmaceutical composition of claim 91, wherein said glycopeptide is a construct having the structure:



wherein the linker is -O-, -NR<sub>G</sub>-, -NR<sub>G</sub>(CR<sub>H</sub>R<sub>I</sub>)<sub>k</sub>NR<sub>J</sub>-,

-NR<sub>G</sub>(CR<sub>H</sub>R<sub>I</sub>)<sub>k</sub>NR<sub>J</sub>(C=O)(CR<sub>H</sub>R<sub>I</sub>)<sub>k</sub>S-, -(CR<sub>H</sub>R<sub>I</sub>)<sub>k</sub>NR<sub>J</sub>-, -O(CR<sub>H</sub>R<sub>I</sub>)<sub>k</sub>NR<sub>J</sub>-,

an oligoester fragment comprising from 2 to about 20 hydroxy acyl residues, a

peptidic fragment comprising from 2 to about 20 amino acyl residues, or a linear

or branched chain alkyl or aryl carboxylic ester; wherein each occurrence of k is

independently 1-5; and each occurrence of R<sub>G</sub>, R<sub>H</sub>, R<sub>I</sub> and R<sub>J</sub> is independently

hydrogen, a linear or branched, substituted or unsubstituted, cyclic or acyclic alkyl moiety, or a substituted or unsubstituted aryl moiety;

wherein the crosslinker is a moiety derived from a crosslinking reagent capable of

conjugating a surface amine of the carrier with a terminal thiol of the linker;

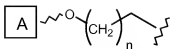
wherein the carrier is a protein or lipid;

wherein m is 1

wherein q is 0 or 1;

wherein each occurrence of R<sub>A</sub>, R<sub>B</sub> and R<sub>C</sub> is independently H or methyl; and

wherein each occurrence of R<sub>D</sub>, R<sub>E</sub> and R<sub>F</sub> is independently an alkyl glycosidic moiety having the structure:



wherein each occurrence of n is independently 0-8.

102. **(Previously Presented)** The pharmaceutical composition of claim 91, wherein the glycopeptide has six occurrences of the alkyl glycosidic moiety having the structure:

